DOCUMENT RESUME

ED 450 703 IR 020 584

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TITLE Building to Scale: An Analysis of Web-Based Services in CIC (Big Ten) Libraries.
PUB DATE 1999-00-00
NOTE 11p.; In: EDUCAUSE '99: Celebrating New Beginnings. [Proceedings] (Long Beach, CA, October 26-29, 1999); see IR 020 580.
AVAILABLE FROM For full text: http://www.educause.edu/conference/e99/proceedings.html.
PUB TYPE Reports - Evaluative (142) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Academic Libraries; Electronic Libraries; Higher Education; *Information Services; Internet; Library Development; *Library Services; *Online Systems; Reference Services; User Needs (Information); World Wide Web
IDENTIFIERS Electronic Resources

ABSTRACT

Advancing library services in large universities requires creative approaches for "building to scale." This is the case for CIC, Committee on Institutional Cooperation (Big Ten), libraries whose home institutions serve thousands of students, faculty, staff, and others. Developing virtual Web-based services is an increasingly viable avenue to bring library services to users at all hours. This paper discusses the virtual services located on the 13 CIC member libraries' Web pages. All CIC institutions are developing innovative new services to better serve their large student, faculty, and staff populations. Issues and strategies related to scaling library services with Web-based delivery systems are discussed using data from a survey of the member libraries as well as analysis of each library Web site. Successes and problems with the scaling and "findability" of different services (reference, instruction, electronic reserves, virtual tours, etc.) are summarized with suggestions for further Web development. (AEF)

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ED 450 703

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IR020584

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Building to Scale: An Analysis of Web-Based Services in CIC (Big Ten) Libraries

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Abstract

This presentation discusses "virtual" services located on the 13 CIC, Committee on Institutional Cooperation (Big Ten) member libraries' web pages. All CIC institutions are developing innovative new services to better serve their large student, faculty, and staff populations. Issues and strategies related to scaling library services with web-based delivery systems will be discussed using data from a survey of the member libraries as well as analysis of each library website. Successes and problems with the scaling and "findability" of different services (reference, instruction, electronic reserves, virtual tours, etc.) are summarized with suggestions for further web development.

EDUCAUSE '99 -- Track 1
Friday, October 29|
8:15AM- 9:00AM

CIC Libraries – A Unique Consortia

Advancing library services in large universities requires creative approaches for "building to scale." This is certainly the case for CIC libraries whose home institutions serve thousands of students, faculty, staff, and others. Developing virtual web-based services is an increasingly viable avenue to bring library services to the users around the clock. This paper examines how the CIC libraries are using the web as a scaling tool to deliver services for the campus and beyond.

The paper builds on an initial study of CIC libraries done for the 1999 Association of College and Research Libraries Annual Conference. It is hoped that these studies may provide ideas for next generation development of the CIC individual and joint web pages that include innovative web-based collaborative services as well as seamless access to collections.

The CIC libraries' mission broadens its historical interest in collection cooperation to include services:

Through cooperation and collaboration, to advance the missions of the individual CIC libraries in their support of teaching, research, and service by:

- CREATING – individually and collectively – new ways to fulfill the information needs of the faculties, students and staffs of the CIC universities;
- EXTENDING and ENHANCING the information resources and services available on each campus by providing equal access to complementary resources throughout the CIC; AND THEREBY, IMPROVING the collections, information resources, and services of the individual CIC libraries.

While individual CIC libraries have advanced web-based service delivery at different levels a number of themes and issues are emerging. The initial CIC website study used a questionnaire to gather information about web-based services available in the winter of 1999.

This paper examines the state of service development on the websites as of fall 1999.

Where is the Library?

Actually locating the CIC libraries' homepages can be a challenge for students and faculty. As of fall 1999 five of the 13 CIC institutions (38%) feature a direct link to the library's homepage from the institutional homepage. King found better results in a study of ARL (Association for Research Libraries) web pages where only 44% of library homepages could be found in one step from the institutions' homepage. Four CIC institutions require two clicks to get to the library homepages. The user must determine what category to click in order to find the library and then click on it. The categories chosen by these four institutions include "resources & services," "services used often," "campus life" and "library and technology." In some cases the word "library" is on the homepage but it is not "clickable." Three institutions require three clicks to get to their respective libraries' homepage. Categories used include "scholars and researchers," "schools and academic departments," and "academics & research." One institution requires four clicks to get to the library's homepage even though the word "library" does appear on the institution's homepage.

Reasons for the range of visibility for each CIC library vary but probably include historical factors of institutional web creation and involvement level of library staff in institutional web creation. Discussions with CIC librarians indicate that once they become aware of the library's imbedded location they attempt to rectify the situation to provide the best possible visibility for the library's homepage. A study of the placement of additional links to the libraries' homepages within other institutional web pages would be revealing in term of multiple entry to the libraries' homepages (i.e. from institutional research page, colleges, departments, or student resources pages).

Where is the CIC?

Though this paper is not focused on library catalogs it is important to note that all 13 libraries provide access to the CIC Virtual Electronic Library otherwise know as the CIC VEL which includes the libraries' collective catalogs. However, only three list the CIC VEL off their homepage. Two other libraries provide the user with an opportunity to click on "other catalogs" or "catalogs of other libraries" where the VEL may then be found on the second click. In a 1998 study Allen and Prabha found that in libraries where the VEL is embedded it takes users an average of three clicks to locate it.

As of the fall of 1999 none of the CIC libraries link to the CIC website, itself (currently it does not contain many specific services for library users). Ironically it takes four clicks to get to the "Links to CIC Libraries" page from the CIC consortia homepage. Another possible barrier is that users cannot go to a CIC library catalog within the VEL and then move to that library's homepage.

An important effort with direct implications for advancing individual and collaborative services of the CIC libraries is Northwestern University Library's search site for CIC libraries' web pages. The site provides users with the ability to search by string or phrase, individual words or utilize Boolean logic for one or more words. Though still in development the site has potential for users to identify specific services found at multiple CIC libraries. It can also be used by CIC librarians and faculty to determine subject areas found on individual CIC library websites and to see if other libraries have developed tutorials, bibliographies, or other service tools. In the future it could be used to group services together or as a site for a jointly developed service such as computer-based tutorials.

The CIC libraries are also working on more sophisticated searching capabilities for the Virtual Electronic Library crossing remaining boundaries between online catalogs and library web pages. Currently each library has many different digital initiatives underway but these are often hidden from the user because they are imbedded in the web page or perhaps not "cataloged"

in an obvious way. Roy Tennant summarizes that "determining a logical structure that supports multiple uses" is the key to developing information for different people who seek and use the information in a wide variety of ways. Thus, a combination of solid cataloging practices and good web placement is a continuing challenge and worthy goal for all of the libraries.

Services on the Web

A primary factor for delivering successful web-based services is that the closer the service site is to the homepage the more accessible it will be to library users. For example, Wan and Chung examine web page design in terms of network analysis. They classify websites according to the complexity of their designs, a factor strongly related to effectiveness and efficiency for users. After mapping the structure of websites they concluded that it is desirable to keep web pages within a close distance to the homepage. McMurdo agrees with the concept of a shallow structure for websites. A second factor in calculating usability is whether users can actually identify the service by its name or category. Naming services can be a help or a hindrance to usage. A third factor, perhaps most basic, is whether or not the user can find the service even if it is located on the homepage. Some library homepages use clickable words, some use buttons, and others a combination of both.

Staff

Library users' ability to get to appropriate staff, either by name or by function is a critical service feature of research libraries. However, an examination of the library homepages indicates that only three of the 13 libraries place a staff directory off their homepages. Also, it is quite rare for homepages to list phone numbers. Of the 13 CIC libraries only one homepage lists the library phone number and another library only lists its street address.

Scaling Library User Education

The CIC libraries are all engaged in library user education programs. Student populations number in the thousands at each institution so the challenge of scaling these program to reach more people is paramount. The CIC libraries offer many different educational programs in a variety of formats including general, subject-based, targeted, course-based, computer-based, and drop-in. Despite these massive efforts many students are still not reached. One problem is making sure students are even aware of the special programs designed to help them use the library. Marketing instructional services effectively is a huge challenge for research libraries.

To this end six CIC libraries have library instruction in some form on their homepage, six others have their education/instruction section two clicks from home, and the remaining library requires three clicks from home. When library instruction is not on the homepage users have to sometimes guess which headings it is under. Choices include "using the library," "about the library," "learn to use the library," what's new," "reference," and "library information."

CIC libraries use the web to advertise library user education courses such as Iowa's Introductory *LOTs (Library's OASIS Training Sessions) of Help!* and drop-in workshops such as *POW (Personal Oasis Workshops* or Penn State's *Electronic Seminar*. Though not part of this project it would also be interesting to look at how many individual course websites link to library web pages.

Web-Based Tutorials

Eight CIC libraries (six from their homepage) are addressing the scaling problem for library instruction, in part, with general web-based instruction, packages, or tutorials. Students can work through the electronic tutorials at their own pace and within their own schedule. Some of the tutorials, such as Iowa's *Library Explorer* and Penn State's *Training Wheels* feature short tests of knowledge for "on the spot" evaluation of learning. Others include Illinois' *Online*

Catalog Tutorial, Purdue's *Research Tutorials*, Minnesota's *Research Quickstart*, and Wisconsin's *Learning Tips/Tutorials*.

A future development for CIC libraries might be to identify cooperative projects for web tutorial development perhaps using the CIC Virtual Electronic Library catalog and its effective use as an initital project. A coordinated effort could save time and resources.

Virtual Reference and Information Services

Five of the 13 libraries feature a direct link from home to e-mail reference services. Four others have the service but users must click from two to four times to locate it. Three CIC libraries call their service "Ask a Librarian." Other names include "Ask Us," "Reference Question," "LibInfo," "Virtual Reference Service," and "Email Ref Page." In all cases library users can pose a question and expect an e-mail response in a certain length of time.

Research Consultations

More in-depth consultation services are visible on at least one homepage called "Research Consultations." Students and faculty can sign up for an appointment to go over a research project or problem with a subject expert in the library.

Access Services

All of the libraries have some information about circulation of materials, renewal and fine policies, and how to obtain materials not owned by the home library.

Circulation: Six of the 13 libraries feature circulation services on their homepage and the remaining seven located circulation two to three clicks from home. Circulation services available range from information about the services to interactive forms permitting users to renew books and check the status of their accounts.

Interlibrary Loan: Three out of 13 CIC libraries have a direct link to interlibrary loan services from their homepage. Others have links requiring either two to three clicks from home to reach ILL services. Interlibrary loan is a particularly important service area for CIC libraries because of the VEL's evolving patron-initiated interlibrary loan capability. However this feature is hidden in the individual CIC library web pages and is not referred to on the ILL web pages. It will be interesting to see, when fully operational, how prominently the service will be marketed by individual CIC libraries.

Reserves: Six of 13 libraries feature reserves on their homepages. Five libraries offer electronic reserves for at least some courses. The rest have reserve lists by courses but not the full text of the item digitized. If not on the homepage students may need to "click" up to three times to locate the reserves although it is likely that they are directed to the location of the needed reserves by faculty. Electronic reserves pose interesting issues related to scaling. Once the reserves are "up" students may access them 24 hours a day from remote locations. However, big scale electronic reserves are not common because of the labor required to mount material needed for many courses. Now, though, faculty are mounting their own reserves though not always following copyright requirements.

Iowa's TWISTed Pairs program is an example of where we've try to "scale" a number of library services on course web pages including a resources page and different types of "reserves" such as this course with images. The concept is to train faculty and/or their graduate students to do the production work and we provide a template and assistance with design and library elements.

Web Design and Evaluation

Selected CIC libraries have conducted some kind of user needs assessment related to their web pages. At Iowa we've completed user surveys to statistically significant populations of undergraduate and graduate students, and are in the process of surveying faculty/staff. In the 1998 survey of undergraduates only 9% reported using LWIS, Iowa's library web presence although 20% reported using *Library Explorer*, the general web-based tutorial. Only 6% used electronic reference. About 50% of the graduates who were surveyed a year later reported using LWIS, 12% used Library *Explorer*, and 12% used electronic mail for reference. The graduate survey did not use the name, LWIS, but asked if the respondent had "used a library web page" to avoid the name recognition problem observed when undergraduates took the survey. The University of Minnesota has a web questionnaire about findability and usage on its homepage. Other CIC libraries are planning studies, using working groups, and hiring consultants to review and propose changes to library web pages.

Appendix 1 summarizes the number of library web sites where a particular service is found, the number found on the libraries' homepage and the number of "clicks" to get to the particular service from the homepage.

Specific services: Electronic reference, library instruction, interlibrary loan, and circulation policy information were the most frequently noted service sites. However, they were not located, in most cases, on the libraries' homepages. Electronic reference was most frequently on the homepage (5 of 13). Interlibrary loan (4 of 13) and circulation policies (4 of 13) appeared on very few homepages. Circulation recalls was the next most common site (11 of 13) with circulation renewals, electronic suggestion box, campus document delivery, and acquisitions suggestions following in frequency. Other common sites include interactive library instruction, circulation renewals, reserves, disability services, frequently asked questions, electronic tours, and technical support. Less frequent were sites for research consultations, distance education or subject-specific interactive library instruction.

"Findability" Issues in CIC Libraries

Locating service sites can either be easy or almost impossible on the various CIC library sites. Two major barriers exist for users. First, the service must be found and, in some cases, important service points are imbedded in the website site requiring two or more "clicks."

The second major barrier to locating services is terminology. Although the service might be on the homepage its label may be obscure to users. Examples of this linguistic obscurity include words like "lending services" for "circulation" (which is also an obscure word to some), "library outreach services" for "distance education," "virtual reference" for "electronic reference services" and *7-Fast* for "document delivery." Librarians are becoming keenly aware of this problem and are applying new, hopefully more understandable names to the services.

Website Successes

CIC libraries reported a number of successes with their services websites. These included elevating services to a level equal to that of information resources, the ability to use electronic request forms for various services, self service features for reference and instruction, delivery of full-text content, and the ability to develop a one library view for library users entering the web space. Many libraries also reported positive experiences with web versions of their OPAC integrated into their web presence.

Website Problems

A number of common problems exist with the CIC libraries' service web sites. Users often do not understand categories where services are placed. Current designs are frequently based on the individual library's organization structure which is not intuitive to the user or does not have a bearing on their particular information need. Service features are buried. The websites contain too much information poorly placed or too little information. Several libraries indicated

the need to improve design based on virtual information delivery rather than to rely on conventional models of delivery in the virtual environment. It may be that commercial sites offer some design ideas (like photographs or graphics to illustrate a product or service) however libraries have not been quick to use techniques perceived as being flashy rather than academic.

Next Steps

CIC libraries are committed to advancing web-based information services and new developments continue to appear on individual websites as more is learned about user needs and interface design. This analysis reveals a growing priority for the member libraries to bring web-based services to the forefront of their web presence in order to scale up these services to more and more library users. Though not a focus of this study the importance of marketing the sites is becoming obvious to CIC librarians based on results of user surveys and anecdotal evidence.

CIC libraries are also interested in advancing projects that promote the rich resources contained on their individual websites. Developing effective searching capabilities across CIC library websites is one such effort underway. Other projects of interest include a searchable database to electronic reference sites and improved links to digital initiatives. CIC libraries are developing strategies to advance their collective virtual presence to the next level. A major challenge for CIC libraries will be how to develop selected cooperative web-based services in a user-friendly and seamless way. Services could include cooperative reference consultation services and joint user education program development. A more multidimensional CIC library website could be developed containing not only the resources found in the VEL and the electronic web-based resources located on member library websites, but also including services and links to expertise. Place these elements in a searchable and responsive site and the scaling services CIC-wide could be fulfilled.

Appendix 1 -- Services on CIC Libraries Websites

Services	Libraries	On Homepage
Circ - policies	13	4
Electronic reference	13	5
ILL	13	4
User education	13	6
Circ - recalls	11	1
Acquisitions suggestions	10	0
Campus document delivery	10	0
Circ - renewals	10	3
Electronic reserves	10	3
Electronic suggestion box	10	4
Reserves (directory)	10	3
Disability services	9	3
Interactive library instr (gen)	9	5
FAQ	8	2
Electronic tour	7	3
Distance education	6	1
Technical support	6	1
Reference consultation	3	1
Interactive library instr (subj)	3	0

Endnotes

1 CIC Libraries include: Universities of Chicago, Illinois-Urbana/Champaign, Illinois-Chicago, Iowa, Michigan, Michigan State, Minnesota, Wisconsin, Indiana University, Northwestern University, Ohio State University, Purdue University, and Pennsylvania State University.

2 "In Search of Services: A Study of CIC Library Web-based Services," forthcoming in *Information Technology and Libraries*, December 1999.

3 *CIC Libraries Strategic Plan, Strategic Directions for 1998*,

(http://www.cic.uiuc.edu/cli/strat98.html)

4 King, p. 463.

5 Allen, B. and Prabha, C. "VEL User Study Report," (study not yet published at this writing, for more information contact Barbara Allen, Director, CIC, 302 East John Street, Suite 1705, Champaign, Illinois 61820-5698, Phone (217) 333-8475 | Fax (217) 244-7127)

6 Tennant, R. "Guest Editorial: Lessons Learned," *Internet Reference Services Quarterly* 3(2): 1-7.

7 Wan, H.A. and Chung, C.W. 1998. "Web Page Design and Network Analysis," *Internet Research: Electronic Networking Applications and Policy* 8(2): 115-122.

8 McMurdo, George. 1998. "Evaluating Web Information and Design," *Journal of Information Science* 24(3): 192-204.

9 University of Iowa Libraries User Needs Assessment Project (http://www.lib.uiowa.edu/lib/unag/ The CIC website is a convenient way to look at homepages of the CIC libraries (http://www.cic.uiuc.edu/cli/links.html)

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Abstract

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ID Number:	EDU9933
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